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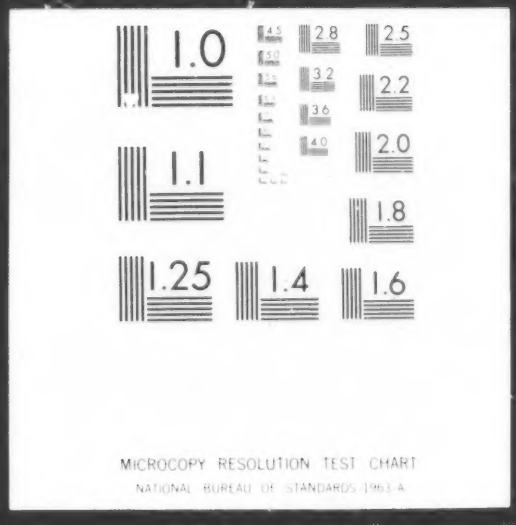

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ABSTRACT

How will the health professionals in the Southern Regional Education Board (SREB) region handle increased demands for health care? This document describes one course of action illustrated by current efforts to increase the supply of health personnel by a shortened curriculum in professional schools. Usually these programs offer only about 3 months less coursework than traditional programs but, by foregoing summer vacations, students can graduate in 3 years. Maldistribution, or the fact that physicians and other health personnel tend to congregate in urbanized areas and to avoid rural ones, is also a major factor in the delivery of dental care. The problem in nursing is the attrition rate, one of the highest of all professions. Given the expense of educating health personnel, the future of American health care appears to lie not in increasing numbers, but in a change in the working patterns of health personnel, patterns related to patient care and to others of the health care team. Preventive, comprehensive care; expanded roles for nurses and utilization of auxiliary personnel; and a team approach to health care--all applied within community settings--spell the future of American health care delivery, and the foci of many Southern curricula presented in this report. (Author/PG)

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NEW HIGHER EDUCATION IN THE SOUTH

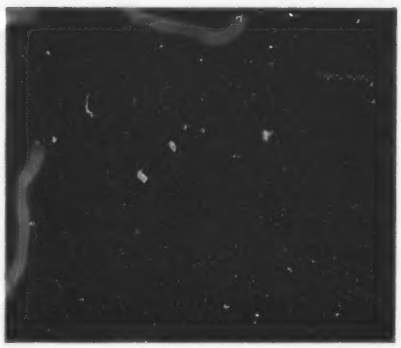
Vol. VIII, No. 3 January/February, 1974

Care and Cure: Health Curriculums for Current Needs

It is projected that the population of the Southern states will increase by 23 percent in the next 30 years. Coupled with increased life expectancies and lowered infant mortality rates, that figure translates into heightened demands for health care—particularly for preventive health care.

Although per capita income and educational levels of most Southern states are below national averages, projections again show an upward trend. Citizens of the Southern states stand to benefit from the prediction that by 1980, the number of families with incomes below $4,000 will be halved nationally; the number of those with incomes over $10,000 doubled. With increased education and increased income there will be a commensurate increase in demand for health services.

However, increases in the demand for health care is not only a phenomenon of decades hence. Already increased population, income and education have encouraged people of the South and the rest of the nation to see health care as a right, not a privilege belonging to a select few. More than three-fourths of our population is now covered by health insurance. By 1975, dental services will be included under Medicaid. And in late December of 1973, President Nixon signed a bill appropriating $250 million for the creation of 300 or more health maintenance organizations (HMO's) by 1978. These HMO's, which discard fee-for-service payments in lieu of annual fees, will include a list of mandatory benefits, among them regular check-ups, preventive dental care for children, alcohol and drug abuse treatments, and "crisis" mental health services.



Meanwhile, the establishment of a national health plan appears imminent. The Carnegie Commission on Higher Education, for example, has noted that "gradually we are likely to shift toward a situation in which health care is a public utility." It is likely that the first step in this direction will be some form of national plan for catastrophic health insurance.

How will the health professionals in the SREB region handle these increased demands for health care? One course of action is illustrated by current efforts to increase the supply of health personnel by a shortened curriculum in professional schools. Usually these programs, such as the federally-funded experimental program at the University of Virginia Medical School and the Kellogg Grant-supported "Multi-Discipline Health Team Curriculum" at the Medical College of Georgia in Augusta, actually offer only about three months less coursework than traditional programs; but by foregoing summer vacations, students can graduate in three years.

In Florida, at the J. Hillis Miller Health Center, a one and one-half year old self-paced "modular" curriculum allows dental students to complete their D.M.D.'s in considerably less than the usual four years. That program, which is receiving national recognition as a model for dental education and which was featured in an HEW funded conference in February, is "non-course structured." After the first nine months, almost

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100 percent of the students' time is "free time," in which they proceed at their own rates with the assistance of computer and audiovisual aids and instructors, through a series of educational goals, dubbed "modules." Pretests are given before each module, allowing qualified students to exempt parts of a module and thus progress more rapidly, emphasizing only needed materials. The school has concurrence with the State Board of Dentistry to give state examinations several times a year, not just annually, as is true in many states—a procedure which will allow the graduates immediate entry into their field.

Despite the shortened times of these and other Southern programs in the health professions, however, their real thrust is not necessarily toward increased supply of medical personnel. And for a very good reason. Authorities in the health field are not convinced that a shortage of health personnel is necessarily the result of the numbers of graduates that schools of nursing, medicine and dentistry produce.

Rather, some, such as Dr. Joseph Hamburg, Dean of the College of Allied Health Professions at the University of Kentucky, contend that the solution is in distribution, utilization and organization of personnel, not sheer numbers. Pointing to the success of pre-paid health plans, such as Hip in New York and Kaiser-Permenente in California, both of which have worked efficiently with a ratio of one physician to 1,000 population, Dr. Hamburg considers the present national physician/patient ratio of 1/700 "an excellent one already. What we need," Dr. Hamburg asserts, "is better distribution and a more organized system of health care delivery."

Maldistribution—or the fact that physicians and other health personnel tend to congregate in urbanized areas and to avoid rural ones—is also a major factor in the delivery of dental care. This will become increasingly serious as the demand for such care outstrips that for many other kinds of care. At the moment, dental care is still seen as a luxury and consequently dental disease is the most widespread of all chronic illnesses. With the step-up in educational and income levels, it is estimated that by 1980 there will be a 50 percent increase over 1969 demand levels for the dentist and his services, but the dentists may not be where they are needed to meet this increased demand.

The nursing field is another example of the fact that shortages are not necessarily a question of numbers of graduates. The problem in nursing is the attrition rate—one of the highest of all professions.

Fewer than half of the nurses prepared by the educational system remain in the work force, and only about three-quarters of the R.N.'s in the work force practice full-time.

So what is the answer? How are the beleaguered health professionals going to cope with the increasing demands for their services? Given the expense of educating health personnel, the future of American health care appears to lie not in increasing numbers, but in a change in the working patterns of health personnel—patterns related to patient care and to others of the health care team. Anticipating—at times inaugurating—restructures of health care delivery systems, numerous Southern schools have already launched innovative and expanded curricula. Almost without exception, these programs and curricula have the same foci, namely, an increased emphasis on: primary (non-acute) care and preventive medicine; expanded functions for nurses and increased use of paraprofessionals; and a team approach to health care delivery.

"Care Not Cure"

In ancient China, a health professional's salary was based on the number of his patients that were well, not—as in our country—on the number of sick people he cured. But keeping well people well is a full-time job, and under our current health care systems, it takes most of the energy of our health professionals just to care for the acute cases.

Ms. Jane Clark, a nurse clinician and a member of Georgia's State Master Planning Committee for Nursing and Nursing Education, put it another way. "Seventy percent of our patients are well or mostly-well 100 percent of the time; 30 percent are acute patients who need to be hospitalized. Yet 70 percent of nursing manpower is involved in acute care settings, and only 30 percent in preventive care."

Ms. Clark points to traditional nursing curricula as part of the reason for the imbalance. "Schools of nursing have not been producing people with skills to work in preventive areas," she said. "So when you come out of nursing school, the only job you feel secure in is in a hospital."

In an article in *The New Physician* in 1970, Dr. Lynn P. Carmichael, Associate Professor at the University of Miami, drew a similar analogy in the field of medicine.

Most undergraduate programs are not relevant to medical practice. It appears that most medical schools attempt to prepare their students for careers as

researchers, academicians and hospital-based specialists. This is in face of the fact that no single school has more than 13 percent of its graduates on medical school faculties, and no school has less than 74 percent of its graduates in clinical practice.

As with nursing, the hospital-based clinical experience of interns and medical students traditionally has focused skills on acute cases, and often, because of these hospitals' locations, on exotic, atypical diseases, at that.

Again, to quote Dr. Carmichael:

For physicians to accept organized community-based practice as they do hospital practice, they must be exposed to models of primary care during their formative period in medical school and graduate training. Medical schools and teaching centers should develop such models separate and distinct from the hospital.

Dr. Carmichael is one of many Southern educators who has done just that. Carmichael directs the Family Medicine Program at the school of Medicine in Miami—one of the first such programs in the nation. A relatively new residency, Family Medicine creates physicians whose specialty is continuing health maintenance of the family.

Acting under the tenet, "care not cure," the residents' main clinical laboratory is not the hospital, but a variety of facilities, such as Family Health Centers, primary care and migrant worker clinics, and correctional institutions. Among a resident's "instructors" and co-workers are social workers, whose contact with the social and physical environments of each patient is invaluable in health maintenance.

Numerous other Family Practice programs which stress early clinical involvement in ambulatory settings have evolved in the region. The Family Practice Program at the University of Virginia in Charlottesville also has its residents work in ambulatory settings. The program there, however, is used in conjunction with another innovative concept—an Affiliated Hospital Program (AHP). The four-year-old AHP, or "Second Faculty Concept," trains students for community medicine by having staff members of various affiliated hospitals in semi-rural areas (Lynchburg, Roanoke, and Winchester) also serve as faculty at the University of Virginia Medical School. Students are "farmed out" to these facilities, thus getting instruction and clinical community experience at the same time.

The AHP also serves a real need in distributing doctors to relatively doctorless areas. Since national studies have indicated that the place a doctor spends his residency is the most crucial factor in where he will locate, the University hopes by this method to feed more doctors into rural settings.

The program has another advantage, according to Ms. Sandra Reeves, Director of Information for the Medical Center. "It's been one factor in the equation of increased entering class quotas," she said. With so many students out in other communities, the faculty at the Medical Center is not so "overtaxed." One result: an entering class of 126 in 1973, versus 76, six years ago.

"Patients don't come neatly packaged into biochemical, physiological or anatomical problems."

In medical school programs, the push toward primary care usually involves a revamping of the traditional curricula in which students studied the basic biological sciences for one and one-half to two years before having much clinical involvement. Rather, in several Southern programs, such as the experimental Alternate Curriculum at the University of Virginia, students take a first-aid course almost immediately, and get regular courses—such as interview techniques and clinical care—earlier and concurrent with their basic science courses.

In the Integrated Curriculum at the University of Alabama Medical School, Birmingham, the organization of learning into departments such as gross anatomy, biochemistry and physiology, has been abandoned for clinically-oriented units. Students, for example, study one organ and instructors from various departments teach only those aspects of their academic disciplines which bear on the diagnosis and treatment of that organ. The student thus progresses from the physical sciences to clinical experience in each unit.

It's another variation of the modular concept, one which excites the students because they apply the basic sciences as they learn them. And, according to Dr. Josiah Macy, an instructor in the program, the approach is also more realistic. As he put it in an interview, "Patients don't come neatly packaged into biochemical, physiological or anatomical problems."

Increased emphasis on comprehensive direct patient care also involves an increased awareness of human sexuality. To deal with the cultural and emotional aspects of sex, Dr. James Thomas, a resident in Psychiatry at the University of Alabama, has instituted and now directs a sequence for medical students called the "Human Sexuality Program." Although the course is voluntary, 86.5 percent of students have opted to take it. A second course,

always taught after the first, is mandatory and consists of two weeks of physiological information about sex.

A consideration of the total health of the human being is also a major focus in changing dental curricula. As with so many medical programs, the shift is toward integrating the clinical and physical sciences, and toward community involvement and comprehensive care. At the J. Hillis Miller Health Center, Dr. Don Allen, Interim Dean at the College of Dentistry, calls it "treating the patient not the tooth." A dental student at the Health Center is matched with a patient whom he sees in a comprehensive care setting for the duration of his education.

Dr. Allen believes this approach better prepares students for private practice than traditional programs in which "the clinical aspect is taught just like the academic—doing technical procedures without responsibility for total care of a patient or family."

A leader since the early 50's in community-based dental programs is the University of Alabama Dental School. All dental seniors there are assigned patients in the community and are expected to provide for all their oral health care needs, including instruction. Students are also rotated in a variety of community settings, such as nursing homes or trailers from the County Health Department, which provide care for children in outlying areas. Bryce State Mental Hospital is also one of the community assignments.

A program to introduce clinics in rural areas is also on the drawingboards at the University of Tennessee, according to Dean Jack Wells. By setting up clinics in Chattanooga and Knoxville, and making these headquarters for interns, Wells hopes that students will be enticed into practice in those areas of need.

Expanded Roles of Nurses and Use of Allied Health Personnel

Nursing is also stressing involvement in preventive care, but here the emphasis is directly tied to recognition that meeting stepped-up health care demands will mean, in many cases, expanding the roles of nurses; in others, simply freeing nurses to **do** nursing. In a variety of programs—some leading to masters degrees, most to certificates—nurses throughout the region are specializing in various areas, such as pediatrics, nurse midwifery, or family practice nursing.

The latter is a direct correlate to Family Medicine programs. For example, students in Vanderbilt's two such programs (a primex one for R.N.'s regardless of educational background; the other for baccalaureate nurses), learn physical assessment and laboratory skills, history taking and pharmacology and take courses in the social sciences. In both of these one-year programs, students serve a three-month preceptorship in the community. The School of Nursing also has joint appointments, wherein faculty members also work in community agencies, an arrangement that gives students, as Dean Sara Archer phrased it, "terrific role models," as well as easier access to agencies.

One unusual aspect of Vanderbilt's primex program is that a few undergraduates regularly participate in the program. This serves as advanced training for senior students, but more importantly, it gives instructors an opportunity to evaluate how much of the advanced curriculum should be taught in undergraduate school.

A breakthrough in primary care was the establishment in 1925 of the Frontier Nursing Program (FNP) in Hyden, Kentucky—an indigent area in the heart of Appalachia. Since its inception, the FNP has extended into child health, nurse midwifery and, more recently, family planning. In this doctor-short area, nurses are certified to assess health needs, and, working with printed medical directions, are authorized to initiate treatment for common ailments. Working in family center outposts, the nurses consult doctors on cases where consultation is needed.

On the other hand, Ms. Rosemary Small, one of the University of Miami's graduates from its recently started Nurse Practitioner Program, is based at the Martin Luther King Clinica Campesina in Florida. Ms. Small and two other nurse practitioners (one family, one pediatric) provide basic care for 100 families (a total of 500 people).

Ms. Small does physical exams, prescribes medicines (again, under defined written orders), and is authorized to treat common ailments such as tonsilitis, infections, anemia and colds. Ms. Small and her co-workers also handle the total needs of pregnant women, except for cases which require attention outside their scope of authority. They also handle well-baby care for children up to six years of age. At this clinic, an obstetrician and gynecologist come in half days, four days a week to see cases that require their attention.

The other fast-growing nursing specialties in the region are also in primary care: pediatrics and nurse midwifery. Since pediatrics

is essentially a well-patient practice, training nurses to handle routine well-baby needs frees pediatricians to work with more acute cases.

The University of Mississippi is also preparing nurses for expanded roles in the delivery of health care. The School of Nursing there started a nurse midwifery program in 1969—the first in the deep South—to assist Holmes County, which has a critical shortage of pediatricians and obstetricians, and which had the highest infant and maternal mortality rate in the nation at that time.

R.N's with at least one year's experience qualify for the program, which has recently changed to a self-paced modular curriculum. Graduates of the program work as part of health teams with general practitioners or obstetricians, managing the care of normal mothers through pregnancy, delivery and postpartum care.

"The nurse midwife is growing in popularity as the person to preside at childbirth."

In the three years since the program was established, it has helped to lower the infant mortality rate from double the national average to the national average. The reason, according to Ms. Barbara Austin of the University's information office, is that "adding another pair of hands to the health team enables the doctors to accomplish more," specifically in freeing them to give more attention to women with "problem pregnancies."

Since September, 1973, the Nursing School has begun offering the program twice a year.

Although the Mississippi program is the only educational one of its kind in the South (and one of only 10 in the nation), others are being mapped out. The FNP, for example, is now working with the University of Kentucky to help set up a nurse midwifery program, according to Dr. Helen Brown, FNP director. And at the Medical University of South Carolina's Nursing School, an educational program in nurse midwifery is being planned to begin in September, 1975.

The impact of such programs on the delivery of health care could be considerable, since the nurse midwife is growing in popularity as the person to preside at childbirth.

"There is a great deal of interest from middle and upper-class communities," according to Ms. Elizabeth Sharp, president of the American College of Nurse Midwives. "Private obstetrical practices are increasingly making use of nurse midwives."

One reason for this trend is a growing interest in prepared and natural methods of childbirth, which nurse midwives study in addition to other methods of childbirth. But more important, according to Carmela Cavero, who will direct South Carolina's program, is that "the nurse midwife has time to give, but a busy obstetrician doesn't," and patients consider the time factor as a crucial factor of "quality care."

It is not necessarily imperative to expand a nurse's role to increase quality health care, however. Many authorities feel that health care systems need to be restructured to free nurses to actually perform the patient care for which they are already trained. In a study by L.P. Christman and R.C. Jelinek, for example, it was reported that:

Work measurement studies of nursing activities demonstrated that only about 25 to 50 percent of the skills of registered nurses are used daily . . . to put it another way, patients are being deprived of anywhere from 50 to 75 percent of professional nursing by the organizational format.

The daily non-nursing functions of an R.N. might include cleaning up medical rooms or ordering supplies. A head nurse may spend up to 70 percent of her time making up time and vacation schedules, doing evaluations and other clinical reports, with only 30 percent left for direct patient care. To some, this tendency to give higher salaries and status to nurses who are removed from their patients could be a factor in the nursing attrition rate.

Today's technology is also having its effect on new ways to deliver preventive health care and to treat illness. New methods and apparatus for diagnosis and treatment of disease are reflected in statistics which indicate that more than 1.4 billion procedures are annually performed in our clinical laboratories. As a result, new specialties have evolved for allied health personnel, whose activities support or complement the functions of physicians, dentists and nurses.

There are now more than 125 categories of allied health. The number of workers in this profession has tripled in the last 15 years.

The Division of Allied Health Manpower of the Bureau of Health Manpower Education, HEW, estimates that there are approximately 72,000 students presently enrolled in a variety of programs included under the rubric of allied health and that these annually graduate approximately 29,000 health workers.

In this region, hospital and vocational institutions provide many educational opportunities for

allied health personnel. In addition, as 1970 figures show, a total of 104 junior colleges offer three or more allied health programs. And 1971 HEW statistics show that senior institutions have at least 84 schools, colleges, departments, and divisions of allied health or colleges which offer three or more programs in this area.

At Georgia State University, for example, a newly-created Department of Community Health Nutrition is housed within the Allied Health Division. Dr. Sara Hunt, who chairs the department, views the baccalaureate program as unusual and important to preventive care because its graduates will be capable of providing "continuity of care in community setups—at the local level," rather than just being dieticians for hospital patients.

Mandatory courses in the program include those in social sciences (sociology, urban life), as well as pharmacology. The latter is offered because of the "tremendous effect drugs have on the body," according to Dr. Hunt, and also because of the growing use of drugs in the community. Students are also required to take journalism and public speaking because, as Dr. Hunt reports, "one of the big problems in getting nutrition information to the community is the inability of nutritionists to talk or write in terms that will appeal to the lay public."

One of the fastest growing allied health professions directly related to primary care is that of the Physician's Assistant or Associate (P.A.), begun at Duke University in 1965. A P.A. program, which usually consists of two or more years of undergraduate courses in basic and biological sciences and clinical medicine, leads to a certificate; students at some schools have the additional option of getting a Bachelor of Health Sciences degree.

At Duke, according to Dr. Reginald Carter, Associate Director of the P.A. program, students have usually had some previous experience in one of the health fields. Most women applicants have an average of two or two and one-half years in some health-related field, such as nursing; the men average three and one-half years experience in a variety of fields, but most have been military corpsmen—the predecessor of this newly-created role.

"There are now more than 125 categories of allied health. The number of workers in this profession has tripled in the last 15 years."

There are presently nine P.A. programs in the Southern states. Eight are NIH supported and thus primary-care oriented; the ninth, offered in South Carolina, is a Medex program.

The duties of a P.A. vary according to the state in which he or she received a certificate, the physician to whom the P.A. is assigned, and the P.A.'s education. Depending upon whether a state's P.A. legislation is basically enabling (as in Florida) or more restrictive (as in Georgia), P.A.'s functions might vary from collecting historical and physical data on a patient, to performing minor surgery or delivering babies. Again, depending upon the state, a P.A. usually works under the immediate surveillance of a physician although, according to Dr. Carter, there are cases in North Carolina and Florida of P.A.'s manning area health clinics. In many cases, the P.A. "functions much the same" as a nurse practitioner, Dr. Carter said.

Another relatively new allied health profession is that of the expanded function dental auxiliary. The rationale for the creation of this role, according to Dr. John Dunbar in his SREB report on manpower and education needs in dentistry, was "to train auxiliaries to perform those dental procedures which do not require the professional dentist's competence, but which currently are performed only by dentists."

The tasks which the new auxiliaries would perform—usually reversible procedures, such as placing temporary fillings or carving and restoring finished teeth—now take up "40 percent of a dentist's actual operating time," according to the same source.

The utilization of such personnel has so far met resistance from many dentists, in part, Dr. Dunbar reasons, because many dentists in the South "have not yet experienced in a direct way the pressures of increasing demand." He cites a survey of dental deans, however, 88 percent of whom judged the chances "good to excellent" that dentists will turn to this form of practice.

The University of Tennessee is one of a few schools which has "expanded function" dental assistants. Their use, according to Dental Dean Wells, "requires very carefully controlled team utilization." The dental school at the J. Hillis Miller Health Center also anticipates using such personnel in the near future.

The Team Approach

In spite of the field's apparent resistance to the expanded function dental auxiliaries, there is no

question that dentistry has been a leader in the utilization of allied health personnel. According to a 1971 survey by the American Dental Association, 90 percent of dentists now employ at least one full- or part-time assistant. Indeed, one of the major contributions of dentistry to the field of health care is that it has documented, as Dr. Dunbar wrote, "that partnership practices and those which make greatest use of auxiliary personnel are dramatically more effective in service output."

Working on the assumption that health teams are important, Dr. David Kindig of the Institute for Health Team Development in Maryland said in a telephone interview that the Institute is involved in finding out "what is the most appropriate kind of interdisciplinary clinical and academic approach in schools, so that when nurses and doctors get out they can all work together instead of starting out from scratch."

For six months the Institute has been developing two or three models of such curricula in primary care. Now they are looking for two or three schools in which to implement and evaluate the programs. The four minimum components of the teams they would inaugurate would be medical, nursing, advocacy (social work, perhaps legal) and mental health.

According to Dr. Kindig "the only other place in the country which is at least approaching the kind of thing we're doing" is the Medical College of Georgia in Augusta. In its newly-started "Multi-Discipline Health Team Curriculum," 18 first-year medical students, chosen from volunteers, 18 junior-year nurses, and 24 P.A.s study and work together for two years. In their first quarter (Fall, 1973), the students had classes together each morning. They now work two afternoons a week in patient-related activities.

The premise—and hope—of the program, according to Dr. Ray Bard, Dean of the Medical College, is that those who learn together may practice together. Dr. William Chew, a professor of medicine who heads up the experimental four-year funded curriculum, specifically intends to illustrate that, "by early contact, a physician can learn what sort of things he can do to extend his ability to treat patients."

The Public— A Critical Factor

Preventive, comprehensive care; expanded roles for nurses and utilization of auxiliary personnel; and a team approach to health care . . . all applied within community settings, spell the future of American health care delivery, and the foci of many a Southern curriculum. A critical factor in this equation, however, is one that has not yet been discussed—the public.

The public's acceptance of—and beyond that, participation in—new systems of health care is not only desired, but necessary. In several of the areas in which the above programs are being implemented, community members have already become, in a sense, extensions of the "team."

In Charlottesville, Virginia, for example a rescue squad that serves a nine-county area is composed of community volunteers. The squad members are a vital part of the mobile care units through which doctors and nurses are able to give emergency care in a predominantly rural area. The volunteers that work with local hospitals in establishing rape crisis centers are other cases in point.

No less important, however, will be the public's ability to shift attitudes. To abandon, perhaps, what one professional publication called the "personal identification of ourselves with 'our doctor' when group practice and team performance in all phases of health care may be essential for quality care"; to abandon the popular conception of a nurse as the "mother-healer." And, perhaps most important for the future of health care delivery, to admit that people are intelligent beings who can participate in preventive care, and be not just passive recipients of "cures."

[redacted]

At least two Southern schools —the **University of Alabama** and the **Medical College of Georgia**— are providing courses in basic computer operations for nurses, hospital administration students and Physician's Associates. Dr. Richard Pogue, associate director and coordinator of the Division of Systems and Computer Services at the Georgia institution, notes they are observing "a great deal of interest from students in the health sciences and School of Nursing."

The Alabama course, "Computer Applications for Health Care Delivery" teaches students to deal with computer experts if they are ever working in a place which wants to install a computer.

The **Louisiana State University** School of Dentistry has opened a Department of Dental Auxiliaries, recently approved by the Board of Supervisors of the LSU System. The department will contain all educational programs of the School of Dentistry relating to the academic and professional training of students in the fields auxiliary to dentistry.

A grant to stimulate interest in biomedical research through laboratory training and special courses for junior and senior science students has been awarded to **Alcorn A & M College's** (Mississippi) Biology department by the U.S. Public Health Service, DHEW.

The **Georgia Institute of Technology** has received a grant from the Alfred P. Sloan Foundation to help change the traditional engineering education concept by emphasizing the economic, political and social implications of technology and developing a multidisciplinary approach.

The **University of North Carolina's** School of Dentistry ranked first in the opinion of the nation's deans of professional schools polled by *Change* Magazine in November.

Virginia Union University and the **Medical College of Virginia** (MCV) are cosponsoring a Summer Health Science Talent Search Program to ferret out potentially good students for medical or health training. Students in the eight-week program work as aides in laboratories at MCV and in Richmond Community Hospital. Emphasis of the program, said Walter O. Bradley, director, "is on a work-learning experience designed to encourage the scientific interest of these students and to increase their knowledge, appreciation and exposure to health care by working in laboratories, hospitals and clinics."

The **Florida A & M** School of Pharmacy has received an award for $796,000 in the form of a Minority Schools Biomedical Support Award from the National Institute of Health. The largest single Federal grant ever received by the University, it will finance cancer research.

For further information:

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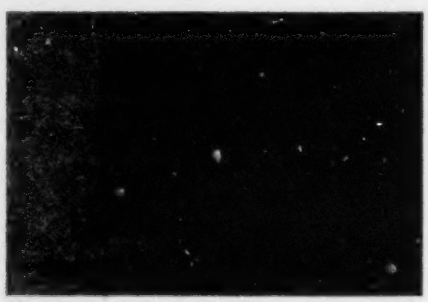

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